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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PERKINS COIE LLP PATENT-SEA P.O. BOX 1247 SEATTLE, WA 98111-1247			EXAMINER KAWSAR, ABDULLAH AL	
			ART UNIT 2195	PAPER NUMBER
			MAIL DATE 01/04/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/697,128

Applicant(s)

ALVERSON ET AL.

Examiner

Abdullah-Al Kawsar

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 and 36-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 36-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/30/2003, 08/26/2004, 11/18/2004, 08/10/2005, 12/08/2005, 09/25/2006, 08/01/2007.

DETAILED ACTION

1. Claims 1-62 are pending.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - a. Group I, drawn to claims 1-29 and 36-56, drawn to caching, classified in class 711, subclass 118.
 - b. Group II, drawn to claims 30-35 and 57-62, drawn to access dedication, classified in class 710, subclass 37.
3. Inventions Group I, and Group II are related as subcombinations disclosed as usable together in a single combination. Group I is drawn to caching. Group II is drawn to access dedication. The combinations are distinct from each other if they are shown to be separate usable. In the instant case, inventions Group I and Group II have separate utility such as search for Group I invention is not required for Group II or Group III invention and vice versa. See MPEP §806.05(d).
4. Because these inventions are distinct for the reason given above and have required a separate status in the art shown by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for one group is not required for the other group, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Mr. Maurice Pirio on 12/14/07 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-29 and 36-56. Applicant is replying to this office action must affirm of this election.

7. Claims 30-35 and 57-62 have been withdrawn for further consideration by examiner, 37 CFR 1.1142(b), as being drawn to non-elected invention. Applicant is required to cancel the non-elected claims in response to this application.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

9. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. This application is a continuation of

application 09/361671, filed 07/27/1999 with priority to parent application 09/192207, filed 11/13/1998. Therefore, the effective filing date of the application is 11/13/1998.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 49-56 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 49 is a Computer-readable medium claim that is not limited to tangible embodiments, instead being defined in the specification page 35, lines 11-14, including both tangible embodiments (e.g. memory device, disk, CD-Rom) and intangible embodiments (e.g. transmitted over transmission mechanism as optic fiber). Applicant is suggested to amend the claim the "computer-readable medium" with "computer-storage medium" or the specification to incorporate only the physical computer media and not a transmission media or other intangible or non-functional media. Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 1-29 and 36-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following claim languages are not clearly understood:
- i. Claim 1, line 2 recites "storing" it is unclear what is being stored. Line 4 it is unclear what is meant by "enabling forwarding" (i.e. enabling forwarding based on what? read or write request? how?) Line 5 it unclear what is meant by "accessed" (i.e. how? Where? who is accessing? what is the access criteria?)
 - ii. Claim 36 and 49 has similar deficiencies as of claim 1 above.
 - iii. Claim 10, line 1 recites "mode is sync" it is unclear what is meant by "sync" mode (i.e. how the sync is performed? Using clock?). Claims 10-11, it is uncertain whether "the synchronization mode" refers to "synchronization access mode" in claim 9 (i.e. if they're the same, the same term should be used)
 - iv. Claims 18, 22, 24 and 45 have similar deficiencies as claim 10 above.
 - v. Claim 11, line 1 recites "mode is normal" it is unclear what is meant by normal mode (i.e. if not sync than is not normal mode?) .
 - vi. Claim 46 has similar deficiencies as claim 11 above.
 - vii. Claim 14 or 18, line 3 it is unclear what is meant by "read data is to be stored" (i.e. where the data to be read is stored?). Line 6 recite "copying data" it is unclear why data is being copied on a read operation.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 1, 4-8, 13, 36, 39-43, 49-53, 55 are rejected under 35 U.S.C. 102(e) as being anticipated by Ray et al. (Ray) US Patent No. 5974483.
16. As per claim 1, Ray teaches the invention as claimed including a method in a computer system for implementing a circular buffer(fig 4; col 1, lines 36-40), comprising:
 - storing in forwarding words, located past an end of the buffer, pointers to locations at the other end of the buffer (col 1, lines 40-43, lines 59-63);
 - enabling forwarding in the pointers (col 1, lines 46-48); and
 - when a forwarding word is accessed, directing the access to the pointed to location at the other end of the buffer (col 1, lines 46-48; lines 40-42).
17. As per claim 4, Ray teaches the access is a read (col 1, lines 47-48).
18. As per claim 5, Ray teaches the access is a write (col 1, lines 46-47).
19. As per claim 6, Ray teaches the access is using a pointer (col 1, lines 43-44).
20. As per claim 7, Ray teaches the pointer is a write pointer (col 1, lines 43-45).

21. As per claim 8, Ray teaches the pointer is a read pointer (col 1, lines 43-45).
22. As per claim 13, Ray teaches the access does not include code for detecting the end of the buffer (col 1, lines 33-43).
23. As per claim 36, it has similar limitations as of claim 1 above. Therefore, it is rejected under the same rational as of claim 1 above.
24. As per claims 39-43, they have similar limitations as of claims 4-8 above. Therefore, they are rejected under the same rational as of claims 4-8 above.
25. As per claim 49, Ray teaches a computer-readable medium for implementing a circular buffer (fig 4; col 1, lines 36-38; col 2, lines 64-67), comprising:
 - a buffer with storage locations, the buffer having a beginning and an end (col 1, lines 39-40; lines 59-63);
 - a forwarding word adjacent to the end of the buffer (col 1, lines 40-42; lines 46-48); and
 - a pointer in the forwarding word pointing to the beginning of the buffer (col 1, lines 40-42; lines 46-48).
26. As per claim 50, Ray teaches multiple forwarding words wherein each forwarding word has a pointer to a storage location (col 1, lines 43-46).

27. As per claim 51, Ray teaches each forwarding word has forwarding enabled (col 1, lines 46-48).

28. As per claim 52, Ray teaches each forwarding word has forwarding enabled (col 1, lines 46-48).

29. As per claim 53, Ray teaches a read pointer (col 1, lines 43-46).

30. As per claim 55, Ray teaches a write pointer (col 1, lines 43-46).

Claim Rejections - 35 USC § 103

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. Claims 2-3, 9, 22-26, 38, 44, 54, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al.(Ray) US Patent No. 5974483, as applied to claims 1, 36 and 49 above, in view of Niu et al.(Niu) US Patent No. 6473818.

33. As per claim 2, Ray does not specifically disclose that the write pointer has value modulo a size of the buffer indicates the starting position for storing data in the buffer.

However, Niu teaches the buffer is pointed to by a write pointer whose value modulo a size of the buffer indicates the starting position for storing data in the buffer (col 6, lines 54-57; lines 63-67 through col 7, lines 1-5).

It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Niu into the method of Ray to have a write pointer whose value modulo a size of the buffer indicates the starting position for storing data in the buffer. The modification would have been obvious because one of the ordinary skills of the art would want to be able to utilize the circular buffer with modulo operand to be able to locate the length of the buffer.

34. As per claim 3, Niu teaches the buffer is pointed to by a read pointer whose value modulo a size of the buffer indicates the starting position for reading data from the buffer(col 6, lines 54-57; lines 63-67 through col 7, lines 1-5).

35. As per claim 9, Niu teaches the pointer has a synchronization access mode (col 2, lines 6-12).

36. As per claim 22, Niu teaches wherein when the access has a synchronization access mode of sync, read access to a location in the buffer is permitted only when the location is full (col 2, lines 37-43).

37. As per claim 23, Niu teaches after the read access, the location is set to empty (col 2, lines 10-12).

38. As per claim 24, Niu teaches the access has a synchronization access mode of sync, write access to a location in the buffer is permitted only when the location is empty (col 2, lines 10-12; lines 37-43).

39. As per claim 25, Niu teaches after the write access, the location is set to full (col 2, lines 10-12).

40. As per claim 26, Niu teaches including storing a pointer to an invalid location in a location adjacent to the forwarding words with forwarding of that location enabled so that when the location adjacent to the forwarding words is accessed, an exception is raised (col 7, lines 10-12; lines 36-39).

41. As per claims 38 and 44, they have similar limitations as of claims 3 and 9 above. Therefore, they are rejected under the same rational as of claims 3 and 9 above.

42. As per claim 54 and 56, they have similar limitations as of claims 3 and 2 above. Therefore, they are rejected under the same rational as of claim 3 and 2 above.

43. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al.(Ray) US Patent No. 5974483, in view of Niu et al.(Niu) US Patent No. 6473818, and further in view of Johnson et al.(Johnson) US Patent No. 4887204.

44. As per claim 10, Ray in view of Niu do not specifically disclose the synchronization mode is sync.

However, Johnson teaches the synchronization mode is sync (col 7, lines 44-46).

It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Johnson into the combined method of Ray and Niu to have synchronization mode. The modification would have been obvious because one of the ordinary skills of the art would want to be able to utilize the synchronization method to be able to read/write on the memory buffer without overwriting modifying any data.

45. As per claim 11, Johnson teaches the synchronization mode is normal (col 7, lines 62-65).

46. As per claim 12, Johnson teaches the synchronization mode can be set (col 7, lines 36-38).

47. Claims 14-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al.(Ray) US Patent No. 5974483, as applied to claim 1 above, in view of Rahman et al.(Rahman) US Patent No. 5805878.

48. As per claim 14, Ray teaches when adding data to the buffer, receiving an indication of data to be written, the data having a size(col 4, lines 54-56; col 5, lines 15-16);

adding an indication of the size of the data to the write pointer(col 3, lines 42-44); and copying the data into the buffer starting at a location indicated by the fetched write pointer (col 4, lines 47-53).

Ray does not specifically disclose fetching a write pointer.

However, Rahman teaches fetching a write pointer (col 3, lines 2-5);

It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Rahman into the method of Ray to have a fetch operand to fetch pointers. The modification would have been obvious because one of the ordinary skills of the art would want to be able to get a read or write pointer according to need and fetch operand assures getting the write pointer.

49. As per claim 15, Rahman teaches the fetching and adding includes executing a fetch and add operation (col 2, lines 64-67 through col 3, lines 1-5.

50. As per claim 16, Ray teaches when the copying would occur in a word located past an end of the buffer, the copying automatically circles to the other end of the buffer (col 1, lines 50-55; lines 59-63).

51. As per claim 18, Ray teaches when reading data from the buffer, receiving an indication of a location where read data is to be stored (col 5, lines 3-5);

fetching a read pointer;

reading a size of the data to be read from the buffer (col 5, lines 16-17); and

copying data from the buffer to the indicated location (col 5, lines 3-6).

Niu does not specifically disclose fetching a write pointer.

However, Rahman teaches fetching a write pointer (col 3, lines 2-5);

52. Claims 17, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al.(Ray) US Patent No. 5974483, in view of Rahman et al.(Rahman) US Patent No. 5805878, and further in view of Niu et al.(Niu) US Patent No. 6473818.

53. As per claim 17, Ray in view of Rahman does not specifically disclose adding includes calculating a modulo of a sum of the addition and a size of the buffer.

However, Niu teaches the adding includes calculating a modulo of a sum of the addition and a size of the buffer (col 6, lines 63-67 through col 7, lines 1-5).

It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Niu into the combined method of Ray and Rahman to calculating a modulo of a sum of the addition and a size of the buffer. The modification would have been obvious because one of the ordinary skills of the art would want to be able to utilize modulo operand to be able to locate the length of the buffer.

54. As per claim 19, Niu teaches setting the read pointer to a sum of the read pointer and the size of the data modulo a size of the buffer (col 6, lines 63-67 through col 7, lines 1-5).

55. As per claim 20, Niu teaches the read pointer is accessed with a synchronization access mode of sync col2, lines 10-12).

56. As per claim 21, Niu teaches wherein the data is read from the buffer using an access control mode of the read pointer (col 2, lines 40-43).

57. Claims 27-29 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al.(Ray) US Patent No. 5974483, as applied to claim 1 and 36 above, in view of Drews (Drews) US Patent No. 5867734.

58. As per claim 27, Ray does not specifically disclose the buffer is accessed by multiple readers and writers.

However, Drew teaches the buffer is accessed by multiple readers and writers (col 2, lines 4-5).

It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Drews into the method of Ray to have the buffer is accessed by multiple readers and writers. The modification would have been obvious because one of the ordinary skills of the art would want to have multiple readers and writers to the buffer to accommodate multiple consumer and producers for accessing the buffer for data.

59. As per claim 28, Drew teaches the buffer is accessed by multiple producers (col 1, lines 16-20).

60. As per claim 29, Drews teaches the buffer is accessed by multiple consumers (col 1, lines 16-20).

61. As per claim 37, it has similar limitations as of claim 27 above. Therefore, it is rejected under the same rational as of claim 27 above.

62. Claims 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al.(Ray) US Patent No. 5974483, in view of Niu et al.(Niu) US Patent No. 6473818, in view of Johnson et al.(Johnson) US Patent No. 4887204.

63. As per claim 45, Ray in view of Niu do not specifically disclose the synchronization mode is sync.

However, Johnson teaches the synchronization mode is sync (col 7, lines 44-46).

64. It would have been obvious to a person of ordinary skill in art at the time of invention was made to incorporate the teaching of Johnson into the combined method of Ray and Niu to have synchronization mode. The modification would have been obvious because one of the

ordinary skills of the art would want to be able to utilize the synchronization method to be able to read write on the memory buffer without overwriting modifying any data.

65. As per claim 46, Johnson teaches the synchronization mode is normal (col 7, lines 62-65).

66. As per claim 47, Johnson teaches the synchronization mode can be set (col 7, lines 36-38).

Conclusion

67. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Oliver (US Patent No. 6044434); Magro (US Patent No. 6151658).

68. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullah-Al Kawsar whose telephone number is 571-270-3169. The examiner can normally be reached on 7:30am to 5:00pm, EST.


69. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng Ai T. An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/697,128
Art Unit: 2195

Page 17

70. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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